

WHAT IS CLAIMED IS:

1. A wavelength division multiplexing transmission system comprising:

5 a transmitter for receiving an SDH optical signal and converting a wavelength of the SDH optical signal to an optical signal for a wavelength division multiplexing; and

10 a receiver for receiving one of the wavelength division multiplexed signal and converting the wavelength of the received signal to an SDH optical signal,

15 wherein said transmitter outputs the optical signal with non-modulated state and the same optical level with modulated state when the transmitter detects an input signal missing and/or an incorrect transmission rate; and said receiver shuts down an optical output of the receiver when the non-modulated signal is detected.

20 2. The wavelength division multiplexing transmission system according to claim 1, wherein the transmitter comprises:

a signal receiving circuit for receiving the SDH optical signal and converting the input SDH optical signal to a corresponding electrical signal, the receiving circuit detecting a state of the input signal missing;

a first clock recovery circuit for generating a clock signal from the electrical signal converted by the receiving circuit, said recovery circuit detecting the out of synchronous of the clock;

5 a threshold setting circuit for setting an input threshold value of a driving circuit of an electrical-to-optical converter of the transmitter; and

a bias adjusting circuit for adjusting a bias voltage of the electrical-to-optical converter,

10 wherein the setting circuit sets the input threshold voltage so as to fix an output of the driving circuit, and the adjusting circuit adjusts the bias voltage such that an optical output level of the transmitter is equal to an optical level in a normal state, when the receiving
15 circuit detects the input signal missing, or the recovery circuit detects the out of synchronous.

3. The wavelength division multiplexing transmission system according to claim 1, wherein the
20 receiver comprises:

an optical-to-electrical converter for converting an input optical signal to a corresponding electrical signal, said converter detecting a state of the input signal missing;

a second clock recovery circuit for generating a clock signal from the electrical signal converted by the optical-to-electrical converter, the second recovery circuit detecting the out of synchronous of the clock;

5 and

an SDH signal generating circuit for generating a SDH optical signal, the generating circuit shutting down an optical output of the generating circuit when then optical-to-electrical converter detects the input optical signal missing, or the second recovery circuit detects the out of synchronous.

4. The wavelength division multiplexing system according to claim 2, the transmitter further comprises:

a storage device for storing a relationship between the bias voltage and the optical output level of the transmitter, or a relationship between the predetermined bias voltage in a modulated state and a non-modulated state of the transmitter.

20

5. A transmitter for converting a Synchronous Digital Hierarchy (SDH) signal into an optical signal for wavelength division multiplexing transmission, comprising:

a signal receiving circuit for receiving the SDH optical signal and converting the input SDH optical signal to a corresponding electrical signal, the receiving circuit detecting a state of an input signal missing;

5 a first clock recovery circuit for generating a clock signal from the electrical signal converted by the receiving circuit, said recovery circuit detecting the out of synchronous of the clock;

10 a threshold setting circuit for setting an input threshold value of a driving circuit of an electrical-to-optical converter of the transmitter; and

a bias adjusting circuit for adjusting a bias voltage of the electrical-to-optical converter,

15 wherein the setting circuit sets the input threshold voltage so as to fix an output of the driving circuit, and the adjusting circuit adjusts the bias voltage such that an optical output level of the transmitter is equal to an optical level in a normal state, when the receiving circuit detects the input signal missing, or the recovery
20 circuit detects the out of synchronous.

6. The transmitter according to claim 5, further comprises:

a storage device for storing a relationship between

the bias voltage and the optical output level of the transmitter, or relationship between the predetermined bias voltage in a modulated state and a non-modulated state of the transmitter.

5

7. A receiver for receiving a wavelength division multiplexing signal and converting into a synchronous digital hierarchy (SDH) signal, comprising:

an optical-to-electrical converter for converting an input optical signal to a corresponding electrical signal, said converter detecting an the input signal missing;

a second clock recovery circuit for generating a clock signal from the electrical signal converted by the optical-to-electrical converter, the second recovery circuit detecting the out of synchronous of the clock; and

an SDH signal generating circuit for generating a SDH optical signal, the generating circuit shutting down an optical output of the generating circuit when then optical-to-electrical converter detects the input optical signal missing, or the second recovery circuit detects the out of synchronous.